If you are using a printed copy of this procedure, and not the on-screen version, then you <u>MUST</u> make sure the dates at the bottom of the printed copy and the on-screen version match.

The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A

C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.8.e 8 O'Clock (PEER 17) Mode 24 Tests

C-A-OF	PM Procedures in v	which this Attachmen	t is used.				
4.120.8							
	Hand Proce	essed Changes					
HPC No.	<u>Date</u>	Page Nos.	<u>Initials</u>				
	Approved: <u>Signature on File</u> Collider-Accelerator Department Chairman						

V. Castillo

4.120.8.e 8 O'Clock (PEER 17) Mode 24 Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:	Checksum:
Division B Software Filename and Checksum: Title:	Checksum:
Initial testing complete:	
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date://
A counterpos tost proceeding complete (following repairs and retesting if required)	
Acceptance test procedure complete (following repairs and retesting if required)	
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date: //
Test Team Leader's Name (Sign):	Date:/
Test results reviewed by:	
Safety Section Head's Name (Print):	Life Number:
Survey Seeded 27 (4220 (2 2220))	
Safety Section Head's Name (Sign):	Date:/
Test results accepted by Radiation Safety Committee:	
RSC Member's Name (Print):	Life Number:
RSC Member's Name (Sign):	Date://

1.1 Verify necessary conditions for Mode 24

	SET VERIFY	CD Key switch for CD Key switch for	XY ARCS XY ARCS
	PLACE VERIFY	Peer 17 in Mode 16 Peer 17 is in Controlled Access	MODE 16
	CLOSE RESET	Peer 17 gates: Plug door, 9GS1 Peer 17 gates: 7GS1, 7EL1, 7GE1, 7MD1, 8GE1, 8GE2, 8MD1,	
	VERIFY	8EL1, 8ED1and 8ED2 Peer 17 gates: □ 7GS1, □ 7EL1, □ 7GE1, □ 7MD1, □ 8GE1, □ 8GE2, □ 8MD1, □ 8EL1, □ 8ED1 and □ 8ED2 are	RESET
	SWEEP VERIFY	Peer 17 Zones: 7Z1, 8Z1, 8Z2 Peer 17 Zones: □ 7Z1, □ 8Z1, □ 8Z2 are	SWEPT
	PLACE VERIFY RECORD	Peer 17 in Mode 24 Peer 17 is in No Access Duration [secs] of Beam Imminent Alarm	MODE 24
	VERIFY	Red No Access Light at Gate 8GE1	ON
	PLACE VERIFY	Peer 17 in Mode 16 Peer 17 is in Controlled Access	MODE 16
	REMOVE VERIFY PLACE VERIFY RESET	Reset from gate 8GE1 MCR sees gate 8GE1 is Peer 17 in Mode 24 Attempt to place Peer 17 in No Access Mode Gate 8GE1	NOT RESET
	VERIFY PLACE VERIFY	MCR sees gate 8GE1 Peer 17 in Mode 24 MCR sees Peer 17 in No Access	RESET MODE 24
	PLACE VERIFY	Peer 17 in Mode 16 Peer 17 is in Controlled Access	MODE 16
_	REMOVE VERIFY PLACE	Sweep from zone 7Z1 MCR sees zone 7Z1 is Peer 17 in Mode 24	NOT SWEPT
	VERIFY SWEEP	Attempt to place Peer 17 in No Access Mode Zone 7Z1	FAIL
	VERIFY PLACE VERIFY	MCR sees zone 7Z1 Peer 17 in Mode 24 MCR sees Peer 17 in No Access	SWEPT MODE 24
	PLACE VERIFY	Peer 17 in Mode 16 Peer 17 is in Controlled Access	MODE 16

Check for test acceptance of Verify necessary conditions for Mode 24

1.2 Verify System Response to Opening a Gate while in Mo)de 2	lode
--	-------	------

VERIFY	CD Key switch for	XY ARCS
PLACE VERIFY	Peer 17 in Mode 24 MCR sees Peer 17 in No Access	MODE 24
WAIT	For Beam Imminent Alarm to stop sounding	
VERIFY VERIFY	MCR sees RHIC Injection CD MCR sees RHIC Injection inhibit	DISABLED OFF
SET	RHIC Primary BS withdraw command	OUT
VERIFY VERIFY	MCR sees RHIC ring inhibit MCR sees RHIC Permit Link	OFF ENABLED
FOLLOW	Test schedule in Table 1, below	

Open gate	Verify Peer 17 go to Mode 2	Verify sweep lost	Verify RHIC ring inh ON	Verify Peer 17 Permit Link is disabled	Verif y RHI C Inj. Inh ON	Place Peer 17 in Mode 24 & alarm stop	Set RHIC prmy BS w/draw cmd OUT	Verify RHIC ring inh OFF	Verify Peer 17 Permit Link is enabled	Verify RHIC Inj. Inh OFF	Goto next gate
7MD1											
8GE1											
8GE2											End of test

Table 1- Test of Gates in Mode 24

☐ Check for test acceptance of System Response to Opening a Gate while in Mode 24

1.3 Verify Entry gates are securely locked in Mode 24

PLACE	Peer 17 in Mode 24	
VERIFY	MCR sees Peer 17 in No Access	MODE 24
WAIT	For Beam Imminent Alarm to stop sounding	
OPEN	Gate 7GE1 with #14 Key and Simultaneous Release	
VERIFY	Attempt to open gate 7GE1 with #14 Key and Simultaneous Release	FAIL
OPEN	Gate 7GE1 with Blue Card	
VERIFY	Attempt to open gate 7GE1 with Blue Card	FAIL
Check for	test acceptance of Verify Entry gates are securely locked in Mode 24	

1.4 Verify System Response to Pulling a Crash Cord while in Mode 24

Test in Zone 7Z1

	VERIFY	CD Key switch for	XY ARCS
	PLACE VERIFY	Peer 17 in Mode 24 MCR sees Peer 17 in No Access	MODE 24
ш	WAIT	For Beam Imminent Alarm to stop sounding	MODE 21
	SET	RHIC Primary Beam Stop Withdraw command	OUT
	~	•	
	VERIFY	MCR sees RHIC Injection CD	DISABLED
	VERIFY	MCR sees RHIC Permit Link	ENABLED
	VERIFY VERIFY	MCR sees RHIC Injection inhibit MCR sees RHIC ring inhibit	OFF OFF
	PULL	Any Zone 7Z1 crash cord [System #:]	Off
	TOLL	Any Zone 121 crash cord [System #]	
	VERIFY	Peer 17 goes to	MODE 2
	VERIFY	Sweep is	LOST
		MCD DIVIGIAL II CD	
	VERIFY	MCR sees RHIC Injection CD	DISABLED
	VERIFY	MCR sees RHIC Permit Link	DISABLED
	VERIFY	MCR sees RHIC Injection inhibit MCR sees RHIC ring inhibit	ON
	VERIFY	NICK sees KHIC ring initialit	ON
	REARM	Crash device	
	RESET	Crash at MCR	
	VERIFY	Crash is	RESET
		D 45: 35 1 44	
_	PLACE	Peer 17 in Mode 24 Peer 17 is in Beam Imminent Mode	MODE 24
	VERIFY	Peer 17 is in Beam Imminent Mode	MODE 24
	PULL	Any Zone 7Z1 crash cord [System #:] when	
	1022	alarm starts sounding	
		•	
	VERIFY	Beam Imminent alarm	STOPS
	VERIFY	Peer 17 has moved to	MODE 2
	VERIFY	MCR sees Zone 7Z1	CRASHED
_	PLACE	Peer 17 in Mode 8 (Restricted Access)	FAIL
	VERIFY REARM	Attempt to go to Mode 8 Crash device	FAIL
	RESET	Crash at MCR	
П	VERIFY	Crash is	RESET
_	PLACE	Peer 17 in Mode 8	112021
	VERIFY	MCR sees Peer 17 in Restricted Access	MODE 8
	Test in Zone	8Z1	
	PLACE	Peer 17 in Mode 24	
	VERIFY	MCR sees Peer 17 in No Access	MODE 24
_	WAIT	For Beam Imminent Alarm to stop sounding	
	SET	RHIC Primary Beam Stop Withdraw command	OUT

VERIFY VERIFY VERIFY VERIFY PULL	MCR sees RHIC Injection CD MCR sees RHIC Permit Link MCR sees RHIC Injection inhibit MCR sees RHIC ring inhibit Any Zone 8Z1 crash cord [System #:]	DISABLED ENABLED OFF OFF
VERIFY VERIFY	Peer 17 goes to Sweep is	MODE 2 LOST
VERIFY VERIFY VERIFY VERIFY	MCR sees RHIC Injection CD MCR sees RHIC Permit Link MCR sees RHIC Injection inhibit MCR sees RHIC ring inhibit	DISABLED DISABLED ON ON
REARM RESET VERIFY	Crash device Crash at MCR Crash is	RESET
PLACE VERIFY	Peer 17 in Mode 24 Peer 17 is in Beam Imminent Mode	MODE 24
PULL	Any Zone 8Z1 crash cord [System #:] when alarm starts sounding	
VERIFY VERIFY VERIFY PLACE VERIFY REARM	Beam Imminent alarm Peer 17 has moved to MCR sees Zone 8Z1 Peer 17 in Mode 8 (Restricted Access) Attempt to go to Mode 8 Crash device	STOPS MODE 2 CRASHED FAIL
RESET VERIFY PLACE VERIFY	Crash at MCR Crash is Peer 17 in Mode 8 MCR sees Peer 17 in Restricted Access	RESET MODE 8
Test in Zone	8Z2	
PLACE VERIFY WAIT	Peer 17 in Mode 24 MCR sees Peer 17 in No Access For Beam Imminent Alarm to stop sounding	MODE 24
SET	RHIC Primary Beam Stop Withdraw command	OUT
VERIFY VERIFY VERIFY VERIFY PULL	MCR sees RHIC Injection CD MCR sees RHIC Permit Link MCR sees RHIC Injection inhibit MCR sees RHIC ring inhibit Any Zone 8Z2 crash cord [System #:]	DISABLED ENABLED OFF OFF
VERIFY VERIFY	Peer 17 goes to Sweep is	MODE 2 LOST

	VERIFY VERIFY	MCR sees RHIC Injection CD MCR sees RHIC Permit Link	DISABLED DISABLED						
	VERIFY	MCR sees RHIC Injection inhibit	ON						
	VERIFY	MCR sees RHIC ring inhibit	ON						
Ц	VEXII I	NEX sees Kille Ing minot	OI						
	REARM	Crash device							
	RESET	Crash at MCR							
	VERIFY	Crash is	RESET						
	PLACE	Peer 17 in Mode 24	140DE 44						
	VERIFY	Peer 17 is in Beam Imminent Mode	MODE 24						
	PULL	Any Zone 8Z2 crash cord [System #:] when							
	TOLL	alarm starts sounding							
	VERIFY	Beam Imminent alarm	STOPS						
	VERIFY	Peer 17 has moved to	MODE 2						
	VERIFY	MCR sees Zone 8Z2	CRASHED						
	PLACE	Peer 17 in Mode 8 (Restricted Access)							
	VERIFY	Attempt to go to Mode 8	FAIL						
	REARM	Crash device							
	RESET	Crash at MCR							
	VERIFY	Crash is	RESET						
	PLACE	Peer 17 in Mode 8							
	VERIFY	MCR sees Peer 17 in Restricted Access	MODE 8						
	PLACE	Peer 17 in Mode 24							
	VERIFY	MCR sees Peer 17 in No Access	MODE 24						
ш	WAIT	For Beam Imminent Alarm to stop sounding	MODE 24						
	*******	To Deam Imminent Plant to stop sounding							
	SET	RHIC Primary Beam Stop Withdraw command	OUT						
	VERIFY	MCR sees RHIC Injection CD	DISABLED						
	VERIFY	MCR sees RHIC Permit Link	ENABLED						
	VERIFY	MCR sees RHIC Injection inhibit	OFF						
	VERIFY	MCR sees RHIC ring inhibit	OFF						
		test acceptance of Verify System Response to Pulling a Crash Cord v	while in Mode 24						
_	Circle for test acceptance of verny system response to 1 uning a crash Coru while in vioue 24								

1.5 Verify System Response to ODH trip while in Mode 24

PLACE VERIFY WAIT	Peer 17 in Mode 24 MCR sees Peer 7 in No Access For Beam Imminent Alarm to stop sounding	MODE 24
SET	RHIC Primary Beam Stop Withdraw command	OUT
VERIFY	MCR sees RHIC Injection CD on CD pg	DISABLED
VERIFY	MCR sees RHIC Permit Link	ENABLED
VERIFY	MCR sees RHIC Injection inhibit	OFF
VERIFY	MCR sees RHIC ring inhibit	OFF
TRIP	ODH sensor using test button, following Table 2, below	

ODH sensor	Trip sen-sor	Verify peer 17 stays in Mode 24	Verify BS with- draw cmd OUT	Verify Rhic ring inh OFF	Verify Permit link is enabled	Verify Rhic Inj. Inh OFF	Verify strobe on	Verify son- alert on	Verify fans & vents off	Go to next test
7AS1/A										
7AS1/B										Next ODH
8AS1/A										
8AS1/B										Next ODH
8AS4/A										
8AS4/B										End of test

Table 2 – Test of ODH sensors in Mode 24

☐ Check for test acceptance of Verify System Response to ODH trip while in Mode 24

1.6 Test Emergency fan ON/OFF controls at 7GE1 in Mode 24

PLACE VERIFY WAIT	Peer 17 in Mode 24 MCR sees Peer 17 in No Access For Beam Imminent Alarm to stop sounding	MODE 24
PRESS WAIT	Emergency fan ON button at gate 7GE1 For 90 sec timeout counter	
VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY PRESS	Fan 7EF2 is Fan 7EF3 is Vent 7AV1 is Vent 7AV2 is Vent 7AV3 is Vent 7AV4 is Vent 7AV5 is	ON ON OPEN OPEN OPEN OPEN
VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY	For 90 sec timeout counter Fan 7EF2 is Fan 7EF3 is Vent 7AV1 is Vent 7AV2 is Vent 7AV3 is Vent 7AV4 is Vent 7AV4 is	OFF OFF CLOSED CLOSED CLOSED CLOSED CLOSED

 $[\]hfill\Box$ Check for acceptance of Test of Emergency fan ON/OFF controls at 7GE1 in Mode 24

1.7	т	est MCR reset	t of Emergency ON/OFF at 7GE1 in Mode 24	
1.7		VERIFY	MCR sees Peer 17 in No Access	MODE 24
	ш	PRESS	Emergency fan ON button at gate 7GE1	MODE 24
		WAIT	For 90 sec timeout counter	
		VERIFY	Fan 7EF2 is	ON
		VERIFY	Fan 7EF3 is	ON
		VERIFY	Vent 7AV1 is	OPEN
		VERIFY	Vent 7AV2 is	OPEN
		VERIFY	Vent 7AV3 is	OPEN
		VERIFY	Vent 7AV4 is	OPEN
		VERIFY	Vent 7AV5 is	OPEN
		PRESS	Emergency fan OFF button at MCR	
		WAIT	For 90 sec timeout counter	
		VERIFY	Fan 7EF2 is	OFF
		VERIFY	Fan 7EF3 is	OFF
		VERIFY	Vent 7AV1 is	CLOSED
		VERIFY	Vent 7AV2 is	CLOSED
		VERIFY	Vent 7AV3 is	CLOSED
		VERIFY	Vent 7AV4 is	CLOSED
		VERIFY	Vent 7AV5 is	CLOSED
		Mode 24	cceptance of Test of MCR reset of Emergency fan ON/OFF controls a	, <u>G</u>
1.8	T	est Emergency	fan ON/OFF controls at 8GE2 in Mode 24	
		PLACE	Peer 17 in Mode 24	
		VERIFY	MCR sees Peer 17 in No Access	MODE 24
	ы	WAIT	For Beam Imminent Alarm to stop sounding	MODE 24
		PRESS	Emergency fan ON button at gate 8GE2	
		WAIT	For 90 sec timeout counter	
		VERIFY	Fan 8EF0 is	ON
		VERIFY	Fan 8EF1 is	ON
		VERIFY	Fan 9EF1 is	ON
		VERIFY	Vent 8AV0 is	OPEN
		VERIFY	Vent 8AV1 is	OPEN
		VERIFY	Vent 8AV2 is	OPEN
		VERIFY	Vent 8AV3 is	OPEN
		VERIFY	Vent 8AV4 is	OPEN
		VERIFY	Vent 9AV1 is	OPEN
		PRESS	Emergency fan OFF button at gate 8GE2	
		WAIT	For 90 sec timeout counter	
		VERIFY	Fan 8EF0 is	OFF
		VERIFY	Fan 8EF1 is	OFF
		VERIFY	Fan 9EF1 is	OFF
		VERIFY	Vent 8AV0 is	CLOSED
		VERIFY	Vent 8AV1 is	CLOSED
		VERIFY	Vent 8AV2 is	CLOSED
		VERIFY	Vent 8AV4 is	CLOSED
		VERIFY	Vent 8AV4 is	CLOSED
		VERIFY	Vent 9AV1 is	CLOSED

☐ Check for acceptance of Test of Emergency fan ON/OFF controls at 8GE2 in Mode 24

	VERIFY	MCR sees Peer 17 in No Access	MODE 24
	PRESS	Emergency fan ON button at gate 8GE2	
	WAIT	For 90 sec timeout counter	
	VERIFY	Fan 8EF0 is	ON
	VERIFY	Fan 8EF1 is	ON
	VERIFY	Fan 9EF1 is	ON
	VERIFY	Vent 8AV0 is	OPEN
	VERIFY	Vent 8AV1 is	OPEN
	VERIFY	Vent 8AV2 is	OPEN
	VERIFY	Vent 8AV3 is	OPEN
	VERIFY	Vent 8AV4 is	OPEN
	VERIFY	Vent 9AV1 is	OPEN
	PRESS	Emergency fan OFF button at MCR	
	WAIT	For 90 sec timeout counter	
	VERIFY	Fan 8EF0 is	OFF
	VERIFY	Fan 8EF1 is	OFF
	VERIFY	Fan 9EF1 is	OFF
	VERIFY	Vent 8AV0 is	CLOSED
	VERIFY	Vent 8AV1 is	CLOSED
	VERIFY	Vent 8AV2 is	CLOSED
	VERIFY	Vent 8AV3 is	CLOSED
11		Vent 8AV4 is	CLOSED
	VERIFY		
	VERIFY VERIFY	Vent 9AV1 is	
	VERIFY Check for a		
	VERIFY Check for a	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF cont	rols at 8GE2 in
	VERIFY Check for a 24 Test local fan o	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF cont controls in service building 1008B Mode 24	rols at 8GE2 in
	VERIFY Check for a 24 Test local fan o	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF cont controls in service building 1008B Mode 24 MCR sees Peer 17 in No Access	rols at 8GE2 in
]	VERIFY Check for a 24 Test local fan o VERIFY PRESS	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF cont controls in service building 1008B Mode 24 MCR sees Peer 17 in No Access Fan ON button at fan box	rols at 8GE2 in 1 MODE 24
" "	Check for a 24 Test local fan o VERIFY PRESS VERIFY VERIFY TURN OFF	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF cont controls in service building 1008B Mode 24 MCR sees Peer 17 in No Access Fan ON button at fan box 1008B fan is 1008B vent is	rols at 8GE2 in MODE 2 ON OPENED
" "	Check for a 24 Test local fan o VERIFY PRESS VERIFY VERIFY	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF cont controls in service building 1008B Mode 24 MCR sees Peer 17 in No Access Fan ON button at fan box 1008B fan is 1008B vent is	rols at 8GE2 in 1 MODE 24
" "	Check for a 24 Cest local fan o VERIFY PRESS VERIFY VERIFY TURN OFF VERIFY PRESS	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF cont controls in service building 1008B Mode 24 MCR sees Peer 17 in No Access Fan ON button at fan box 1008B fan is 1008B vent is 1008B fan using MCR Fan OFF button Attempt to turn off 1008B fan using MCR Fan OFF button Fan OFF button at fan box	MODE 24 ON OPENED
" "	Check for a 24 Cest local fan o VERIFY PRESS VERIFY VERIFY TURN OFF VERIFY	Vent 9AV1 is acceptance of Test of MCR reset of Emergency fan ON/OFF content controls in service building 1008B Mode 24 MCR sees Peer 17 in No Access Fan ON button at fan box 1008B fan is 1008B vent is 1008B fan using MCR Fan OFF button Attempt to turn off 1008B fan using MCR Fan OFF button	MODE 24 ON OPENED

Test MCR reset of Emergency ON/OFF at 8GE2 in Mode 24

1.9

1.11 Test Division A loss of Remote I/O in Mode 24

VERIFY	CD Key switch is set for	XY ARCS
VERIFY	MCR sees Peer 17 in No Access	MODE 24
SET	RHIC Primary Beam Stop Withdraw command	OUT
VERIFY VERIFY VERIFY VERIFY UNPLUG	MCR sees RHIC Injection CD on CD pg MCR sees RHIC Permit Link MCR sees RHIC Injection inhibit MCR sees RHIC ring inhibit Remote I/O cable from Scanner module in Peer 17A	DISABLED ENABLED OFF OFF
VERIFY	MCR sees Peer 17 Div A CD RIO on H/W pg	FAULT
VERIFY	MCR sees Peer 17 Div A go to	MODE 2
VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY VERIFY	MCR sees RHIC Injection CD on CD pg MCR sees Div A RHIC Permit Link MCR sees Div A RHIC Injection inhibit MCR sees Div A RHIC ring inhibit MCR sees Div A RHIC Injn rhbk latch MCR sees Div A RHIC rhbk latch MCR sees on CD pg W MCR sees on CD pg RHIC MCR sees on CD pg BS G3	DISABLED DISABLED ON ON ON ON REACHBACK REACHBACK
REPLACE	Remote I/O cable at Scanner module in Peer 17A	
RESET VERIFY	NG CRIT I/O condition at MCR MCR sees CD RIO	OK
PLACE VERIFY	Peer 17 in Mode 2 MCR sees Peer 17 in Safe Access	MODE 2
PLACE VERIFY	Peer 17 in Mode 16 MCR sees Peer 17 in Controlled Access	MODE 16

[☐] Check for test acceptance of Division A loss of Remote I/O in Mode 24

.12	Τe	est Division B	loss of Remote I/O in Mode 24	
		VERIFY	CD Key switch is set for	XY ARCS
		VERIFY	MCR sees Peer 17 in No Access	MODE 24
		SET	RHIC Primary Beam Stop Withdraw command	OUT
		VERIFY	MCR sees RHIC Injection CD on CD pg	DISABLED
		VERIFY	MCR sees RHIC Permit Link	ENABLED
		VERIFY	MCR sees RHIC Injection inhibit	OFF
		VERIFY	MCR sees RHIC ring inhibit	OFF
		UNPLUG	Remote I/O cable from Scanner module in Peer 7B	
		VERIFY	MCR sees Peer 17 Div B CD RIO on H/W pg	FAULT
		VERIFY	MCR sees Peer 17 Div B go to	MODE 2
		VERIFY	MCR sees RHIC Injection CD on CD pg	DISABLED
		VERIFY	MCR sees Div B RHIC Permit Link	DISABLED
		VERIFY	MCR sees Div B RHIC Injection inhibit	ON
		VERIFY	MCR sees Div B RHIC ring inhibit	ON
		VERIFY	MCR sees Div B RHIC Injn rhbk latch	ON
		VERIFY	MCR sees Div B RHIC rhbk latch	ON
		VERIFY	MCR sees on CD pg W	REACHBACK
		VERIFY	MCR sees on CD pg RHIC	REACHBACK
		VERIFY	MCR sees on CD pg BS G3	IN
		REPLACE	Remote I/O cable at Scanner module in Peer 7B	
		RESET	NG CRIT I/O condition at MCR	
		VERIFY	MCR sees CD RIO	OK
		PLACE	Peer 17 in Mode 2	
		VERIFY	MCR sees Peer 17 in Safe Access	MODE 2
		PLACE	Peer 17 in Mode 16	
		VERIFY	MCR sees Peer 17 in Controlled Access	MODE 16

1.13 Sweep tests in Mode 24

CLOSE Peer 17 gates: Plug door, 9GS1 Peer 17 gates: 7GS1, 7EL1, 7GE1, 7MD1, 8GE1, 8GE2, 8MD1, RESET 8EL1, 8ED1 and 8ED2 □ VERIFY **Peer 17 gates:** □ 7GS1, □ 7EL1, □ 7GE1, □ 7MD1, □ 8GE1, RESET \square 8GE2, \square 8MD1, \square 8EL1, \square 8ED1 and \square 8ED2 are **SWEEP Peer 17 Zones:** 7Z1, 8Z1, 8Z2 □ VERIFY **Peer 17 Zones:** □ 7Z1, □ 8Z1, □ 8Z2 are **SWEPT** Peer 17 in Mode 24 **PLACE** □ VERIFY Peer 17 is in No Access **MODE 24 PLACE** Peer 17 in Mode 16 Peer 17 is in Controlled Access □ VERIFY **MODE 16 FOLLOW** Test Schedule in Table 3, below

Zone	Gate	Open gate	Verify sweep lost	Verify cannot sweep with gate open	Close gate	Force sweep	Verify cannot go to Mode 24	Reset gate	Verify can go to Mode 24	Go to Mode 16 & next gate
7Z1	7GE1									
8Z1	8GE1									
8Z2	8GE2									

Table 3 – Sweep tests in Mode 24

☐ Check for test acceptance of Sweep tests in Mode 24

1.14 Chipmunk Tests in Mode 24

	VERIFY	CD Key switch for	XY ARCS
	ATTACH	Test Box to Chipmunk prior to test	
	PLACE	Peer 17 in Mode 24	
	VERIFY	MCR sees Peer 17 in No Access	MODE 24
	WAIT	For Beam Imminent Alarm to stop sounding	
	SET	RHIC Primary Beam Stop Withdraw command	OUT
	VERIFY	MCR sees RHIC Injection CD	DISABLED
	VERIFY	MCR sees RHIC Permit Link	ENABLED
	VERIFY	MCR sees RHIC Injection inhibit	OFF
П	VERIFY	MCR sees RHIC ring inhibit	OFF

C'munk	Press & verify div A trip	Verify peer 17 stays in mode 24	Verify div A Rhic ring inh ON	Verify div A Rhic permit link disabled	Verify div A Rhic Inj. Inh ON	Reset all Systems & cycle BS cmd to OUT	Verify div A Rhic ring inh OFF	Verify div A Rhic permit link enabled	Verify div A Rhic Inj. Inh OFF	Goto table 5 for div B trip
C112										
C113										
C114										

Table 4 – Division A trip test in Mode 24

C'munk	Press & verify div B trip	Verify peer 17 stays in mode 24	Verify div B Rhic ring inh ON	Verify div B Rhic permit link disabled	Verify div B Rhic Inj. Inh ON	Reset all Systems & cycle BS cmd to OUT	Verify div A & B Rhic ring inh OFF	Verify div A & B Rhic permit link enabled	Verify div A & B Rhic Inj. inh OFF	Goto table 6 for div A fails
C112										
C113										
C114										

Table 5 – Division B Trip test in Mode 24

C'munk	Press & verify div A fails	Verify peer 17 divA goes to mode 2	Verify div A Rhic ring inh ON	Verify div A Rhic permit link disabled	Verify div A Rhic Inj. Inh ON	Reset all systms & place peer 17 div A & B in Mode 2	Place peer 7 in mode 24 & alarm stop	Verify pmry BS with-draw cmd is OUT	Verify div A & B Rhic ring inh OFF	Verify div A & B Rhic permit link enabled	Verify div A & B Rhic Inj. Inh OFF	Go to table 7 for div B fails
C112												
C113												
C114												

Table 6 - Division A Fails test in Mode 24

C'munk	Press & verify div B fails	Verify peer 17 divB goes to mode 2	Verify div B Rhic ring inh ON	Verify div B Rhic permit link disabled	Verify div B Rhic Inj. Inh ON	Reset all systms & place peer 17 div A & B in Mode 2	Place peer 7 in mode 24 & alarm stop	Verify pmry BS with-draw cmd is OUT	Verify div A & B Rhic ring inh OFF	Verify div A & B Rhic permit link enabled	Verify div A & B Rhic Inj. Inh OFF	See end of test instrns below
C112												
C113												
C114												

Table 7 - Division B Fails test in Mode 24

End of Test Instructions:

DETACH Test Box from Chipmunk after test

CONNECT Cable to Chipmunk
RESET Chipmunk faults at MCR

VERIFY MCR sees Chipmunk

OK

ATTACH Test Box to next Chipmunk for test / or end Chipmunk test

START Test sequence at Table 4

☐ Check for acceptance of Chipmunk Tests in Mode 24

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing:			
	Date:	_/_	/
TTL: Sign for completion of final testing:			
· · · · · · · · · · · · · · · · · · ·	Date:		